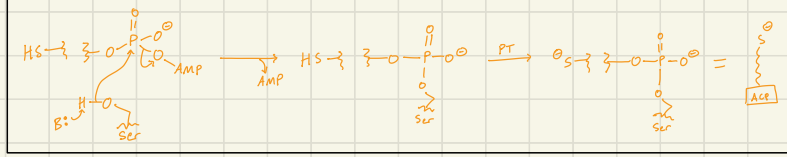
## ACP ppant arm formation



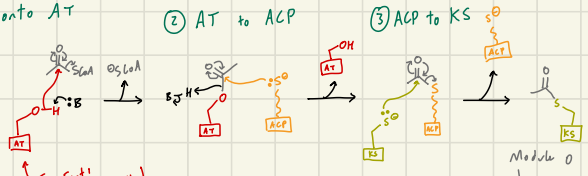

## Module 0

w acetyl CoA

① onto AT

② AT to ACP

③ ACP to KS




Fun Fact! mammalian AT called MAT in literature

④ OLD unit on KS adds onto NEW unit on ACP

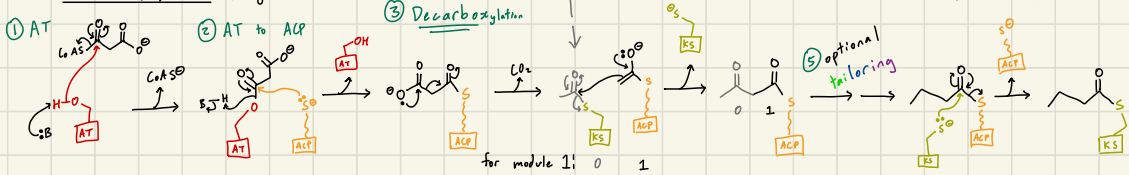
## Module 1, 2, … etc

w malonyl CoA

① AT

② AT to ACP

③ Decarboxylation



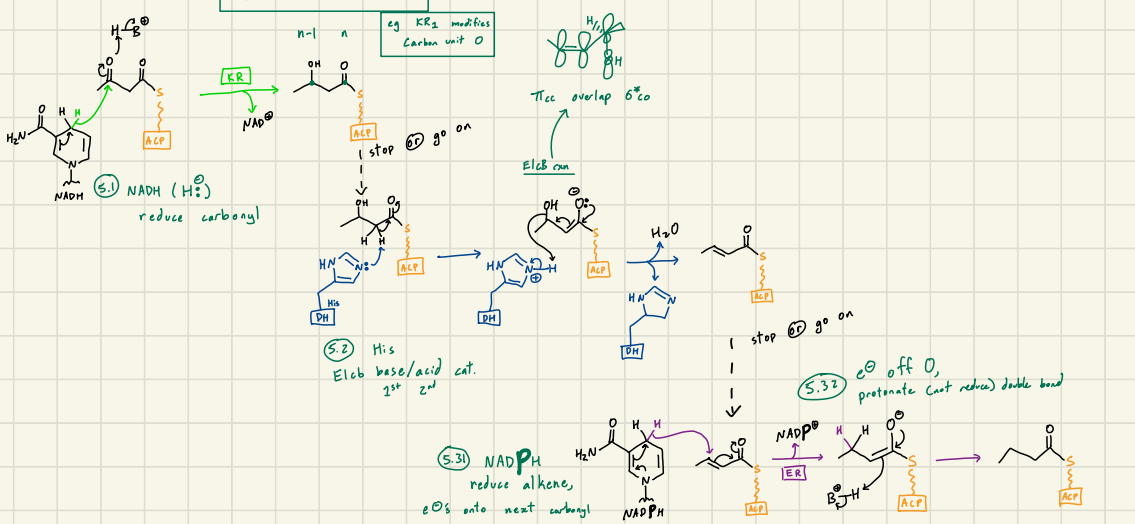

⑤ optional tailoring

⑥ (New units) ACP to KS

## Tailoring

Domain$_n$ (eg $KR_n$) modifies Carbon n-1

eg $KR_1$ modifies Carbon unit 0




⑤.1 NADH ($H^{\ominus}$) reduce carbonyl

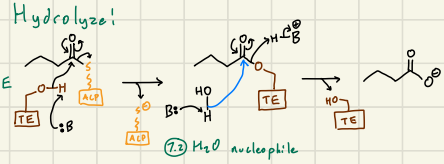
⑤.2 His ElcB base/acid cat. 1st 2nd

⑤.31 NADPH reduce alkene, $e^{\ominus}$s onto next carbonyl

⑤.32 $e^{\ominus}$ off O, protonate (not reduce) double bond

## ⑦ Termination after all units added

Hydrolyze!




⑦.1 ACP to TE

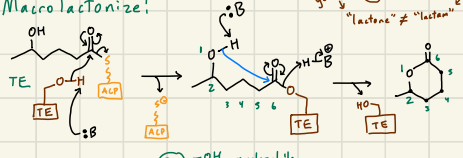
⑦.2 $H_2O$ nucleophile

OR

Macrolactonize!

requires -OH somewhere

Fun Fact! yummy "lactone" ≠ "lactam" antibiotic




⑦.1 ACP to TE

⑦.2 -OH nucleophile